

Work Order ID 85489

\*85489\*

Page 1

June-08-12 10:14:42 AM

Item ID: D3407-3

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Stem

Start Date: 08/06/2012 Start Qty: 30.00

\*30\*

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 30.00

\*30\*

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/06/08

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D3407

Rev E

100

0.00

\*100\*

DOOSAN LATHE

Doosan

Memo

0.00

Doosan Lathe

1-Turn as per Folio FA597 Rev: 11 & Dwg D3407 Rev: 2-Deburr

110

QC2- Inspect parts off machine FAI/FAIB

0.00

\*110\*

QC

Memo

0.00

Quality Control

120

QC8- Inspect parts - second check

0.00

\*120\*

QC

Memo

0.00

Quality Control

30  $\phi$

30  $\phi$

30  $\phi$

DA  
13  
9-89

12/7/23

DAS  
13  
9-89

12/7/23

DA  
14  
9-89

12/07/27

# Work Order ID 85489

**\*85489\***

Page 2

June-08-12 10:14:42 AM

Item ID: D3407-3

Accept

**\*N9000040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Stem

Stop **\*NS2\***

Start Date: 08/06/2012 Start Qty: 30.00

**\*30\***

Cust Item ID:

Required Date: 22/06/2012 Req'd Qty: 30.00

**\*30\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

Identify as per dwg & Stock Location: WA

0.00

**\*130\***

Packaging

Memo

0.00

Packaging

30

12/7/27 SP

140

QC21- Final Inspection - Work Order Release

0.00

**\*140\***

QC

Memo

0.00

Quality Control

12/7/30

MF  
12-07-27

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|                                                              |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
|--------------------------------------------------------------|------|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|--------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |      |      |     | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> <div>           Engineering Quality <input type="checkbox"/><br/> <input type="checkbox"/><br/> <input type="checkbox"/><br/> <input type="checkbox"/> </div> </div> |             |              |              |  |  |
| Root Cause                                                   | Date | Step | Qty | Description of work order update or Non-conformance                                                                                                                             | Initial Chief Eng | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sign & Date | Verification | QC Inspector |  |  |
| Doc/Data <input type="checkbox"/>                            |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Equip/Tooling <input type="checkbox"/>                       |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Operator <input type="checkbox"/>                            |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Material <input type="checkbox"/>                            |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Offset/Setup <input type="checkbox"/>                        |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Other <input type="checkbox"/>                               |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Process <input type="checkbox"/>                             |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Supplier <input type="checkbox"/>                            |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Training <input type="checkbox"/>                            |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |
| Unauthorized <input type="checkbox"/>                        |      |      |     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |              |              |  |  |

| FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending Passes Below Min<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimp at Bending<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Other<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Ripples on Inner Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>Hardware</b><br><input type="checkbox"/> Breaking<br><input type="checkbox"/> Missing<br><input type="checkbox"/> Size/Length<br><input type="checkbox"/> Spinning<br><input type="checkbox"/> Threading<br><input type="checkbox"/> Wrong<br><br><b>Drill Holes</b><br><input type="checkbox"/> Misaligned<br><input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Undersized<br><input type="checkbox"/> Too Many | <b>General</b><br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Documentation/Data<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Inspection Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Jigs/Fixtures/Tooling<br><input type="checkbox"/> Kit Incorrect<br><input type="checkbox"/> Kit Missing | <input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Off-Set<br><input type="checkbox"/> Orientation Misread<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Lost<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Raw Material | <input type="checkbox"/> Set-up<br><input type="checkbox"/> Supplier<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other<br>_____<br>_____<br>_____ |

# Picklist Print

June-08-12 10:14:48 AM

Page 1

Work Order ID: 85489

**\*85489\***

Parent Item: D3407-3

**\*D3407-3\***

Parent Item Name: Stem

Start Date: 08/06/2012

Required Date: 22/06/2012

Start Qty: 30.00

Required Qty: 30.00

## Comments:

IPP Rev:A05.10.18New issueKJ/EC

IPP Rev:B Now on Doosan 08-05-14 JLM Verified By:DD

IPP Rev:C 08-08-12 revE as per dwg (ecn 08-507) DD verified by:EC

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

M174R0.750

Purchased

No

100

f

26.9240

0.366

11.55789

\*\*

**\*M174R0 750\***

17-4 round bar .750

DAS  
13  
8-83

12/7/23

## Location

## Loc Qty

## Loc Code

MAT030

26.924

117683

0.465

118483

0.359

120196

5

121282

21.1

122+

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------|--------------------------------------------|--------------------------------------|------------------------------------|------------------------------------|----------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|-----------------------------------|--------------------------|------------------------------------|------------------------------------|--------------------------------|--------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Work Order Update <input type="checkbox"/> |                   | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Supplier <input type="checkbox"/> | <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Other <input type="checkbox"/> | <input type="checkbox"/> |
| Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Crosstube <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/>   | Engineering <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Small Fab <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Quality <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Thermoforming <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Finishing <input type="checkbox"/> | Supplier <input type="checkbox"/>            | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Large Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Composite <input type="checkbox"/> | Other <input type="checkbox"/>               | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Date                               | Step                                         | Qty                                                                                                                                                                                                                                                                                                                                                                                                                                  | Description of work order update or Non-conformance                                                                                                                             | Initial Chief Eng | Action Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Sign & Date | Verification | QC Inspector                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Doc/Data <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Equip/Tooling <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Operator <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Material <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Offset/Setup <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Other <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Process <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Training <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| Unauthorized <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| <b>FAULT CATEGORY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                 |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                    |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |
| <b>Landing Gear</b><br><input type="checkbox"/> Bending Passes Below Min<br><input type="checkbox"/> Centre Not Concentric to O/S<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crushed/Crimp at Bending<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Other<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Ripples on Inner Bend<br><input type="checkbox"/> Torque Waves in Extrusion<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube |                                    |                                              | <b>Hardware</b><br><input type="checkbox"/> Breaking<br><input type="checkbox"/> Missing<br><input type="checkbox"/> Size/Length<br><input type="checkbox"/> Spinning<br><input type="checkbox"/> Threading<br><input type="checkbox"/> Wrong<br><br><b>Drill Holes</b><br><input type="checkbox"/> Misaligned<br><input type="checkbox"/> Ovalized<br><input type="checkbox"/> Over/Undersized<br><input type="checkbox"/> Too Many |                                                                                                                                                                                 |                   | <b>General</b><br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Documentation/Data<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Inspection Incomplete<br><input type="checkbox"/> Inspection Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Jigs/Fixtures/Tooling<br><input type="checkbox"/> Kit Incorrect<br><input type="checkbox"/> Kit Missing                                                                                                                                                                                                                                                                                                                                                                                                                          |             |              | <input type="checkbox"/> Maintenance<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Off-Set<br><input type="checkbox"/> Orientation Misread<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence<br><input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Lost<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Raw Material |  | <input type="checkbox"/> Set-up<br><input type="checkbox"/> Supplier<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other<br>_____<br>_____<br>_____ |                                    |                                    |                                            |                                      |                                    |                                    |                                              |                                  |                                        |                                    |                                   |                          |                                    |                                    |                                |                          |

|                              |  |              |         |
|------------------------------|--|--------------|---------|
| DART AEROSPACE LTD           |  | Work Order:  | ESY89   |
| Description: Stem            |  | Part Number: | D3407-3 |
| Inspection Dwg: D3407 Rev: E |  | Page 1 of 1  |         |

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

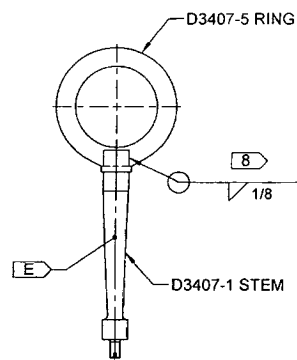
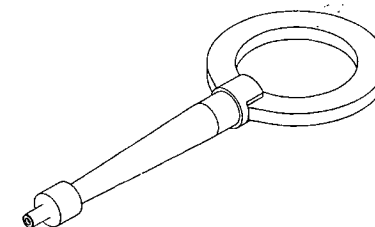
| Drawing Dimension | Tolerance                  | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|----------------------------|------------------|--------|--------|----------------------|----------|
| 0.063             | +/-0.010                   | .070             | /      |        | SA-9                 | VJH      |
| 1/4-28 UNF        | Max: 0.2668<br>Min: 0.2635 | .265             | /      |        | SA-5                 | M.C      |
| Major Ø           | Max: 0.249<br>Min: 0.2425  | .2445            | /      |        |                      |          |
| Ø0.625            | +/-0.010                   | .625             | /      |        |                      |          |
| Ø0.363            | +/-0.010                   | .363             | /      |        |                      |          |
| Ø0.750            | +/-0.010                   | .750             | /      |        |                      |          |
| R0.100            | +/-0.010                   | R.100            | /      |        | R.G.                 |          |
| 0.470             | +/-0.010                   | .469             | /      |        |                      |          |
| 0.250             | +/-0.010                   | .247             | /      |        |                      |          |
| 2.555             | +/-0.010                   | 2.545            | /      |        |                      |          |
| 3.305             | +0.000/-0.010              | 3.295            | /      |        |                      |          |
| 4.325             | +/-0.010                   | 4.327            | /      |        |                      | 2nd op   |
| 0.150             | +/-0.010                   | .152             | /      |        |                      |          |
| 0.550             | +/-0.010                   | .557             | /      |        |                      |          |
| 0.625             | +/-0.010                   | .623             | /      |        |                      |          |
| 0.250             | +0.010/-0.000              | .258             | /      |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |
|                   |                            |                  |        |        |                      |          |

|                            |                           |                     |     |
|----------------------------|---------------------------|---------------------|-----|
| Measured by: <b>DAS 13</b> | Audited by: <b>DAS 14</b> | Prototype Approval: | N/A |
| Date: 12/7/23              | Date: 12/07/22            | Date:               | N/A |

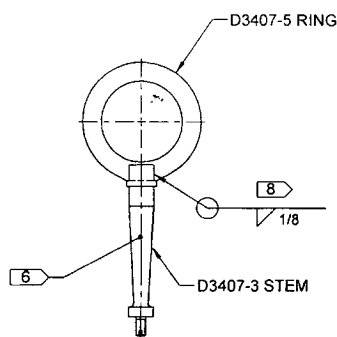
| Rev | Date     | Change                           | Revised by | Approved |
|-----|----------|----------------------------------|------------|----------|
| A   | 06.11.08 | New Issue                        | KJ/JLM     |          |
| B   | 07.09.26 | Tolerances revised               | KJ/EC      |          |
| C   | 08.05.14 | Dimensions updated per Dwg Rev D | KJ/JLM     |          |
| D   | 08.10.07 | Dimensions updated per Dwg Rev E | KJ/DD      |          |

| QTY<br>-041 | QTY<br>-043 | QTY<br>-045 | PART NUMBER | DESCRIPTION |
|-------------|-------------|-------------|-------------|-------------|
| X           |             |             | D3407-041   | TOW RING    |
|             | X           |             | D3407-043   | TOW RING    |
|             |             | X           | D3407-045   | TOW RING    |
| 1           |             |             | D3407-1     | STEM        |
|             | 1           |             | D3407-3     | STEM        |
| 1           | 1           | 1           | D3407-5     | RING        |
|             |             | 1           | D3407-7     | STEM        |

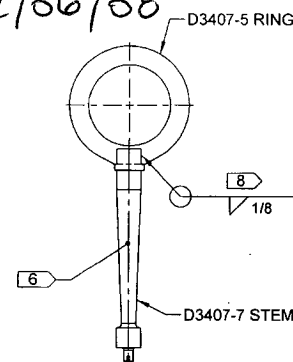
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 85489 MJS  
12/06/08



**D3407-041 TOW RING**



**D3407-043 TOW RING**



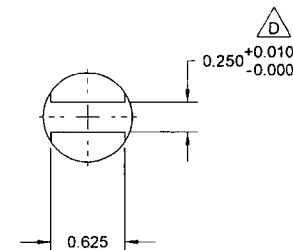
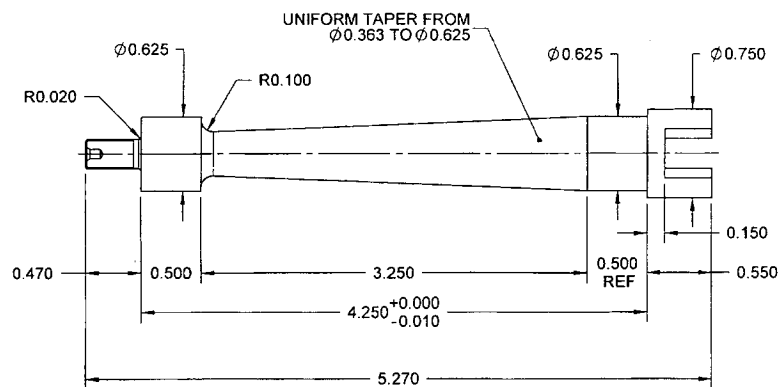
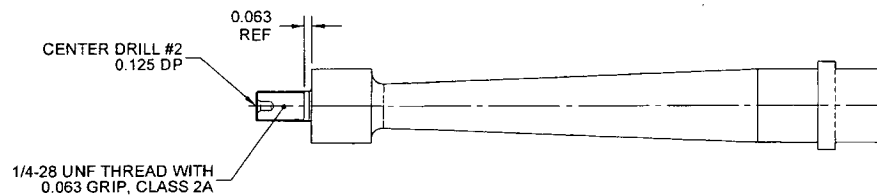
**D3407-045 TOW RING**

**RELEASED**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
- 8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

|            |                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |              |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| E          | ADD D3407-045 (ZN B2-1, D8-1); ADD D3407-7 (ZN B6-5);<br>REVISED NOTE 6 TO ADD IDENTIFICATION (ZN A5-1);<br>REASON: PRODUCTION FACILITY                                                        | PH                                                                                                                                                                                                                                                                                            | 08.07.23     |
| D          | D3407-1/3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY<br>WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW<br>FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/3 (ZN<br>B6-4); REASON: PRODUCTION FACILITY | PH                                                                                                                                                                                                                                                                                            | 08.04.07     |
| C          | -1/3 LONGER FOR FIT W/WASHER                                                                                                                                                                   | CP                                                                                                                                                                                                                                                                                            | 05.09.09     |
| B          | UPDATE DIAMETER, THREAD CLASS ADDED                                                                                                                                                            | CP                                                                                                                                                                                                                                                                                            | 05.06.17     |
| A          | NEW ISSUE                                                                                                                                                                                      | CP                                                                                                                                                                                                                                                                                            | 05.03.16     |
| REV.       | DESCRIPTION                                                                                                                                                                                    | BY                                                                                                                                                                                                                                                                                            | DATE         |
| DESIGN     |                                                                                                                                                                                                | <b>DART AEROSPACE USA, INC.</b><br>PORT HADLOCK, WA                                                                                                                                                                                                                                           |              |
| DRAWN      |                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                               |              |
| CHECKED    |                                                                                                                                                                                                | DRAWING NO.                                                                                                                                                                                                                                                                                   | REV. E       |
| MFG. APPR. |                                                                                                                                                                                                | D3407                                                                                                                                                                                                                                                                                         | SHEET 1 OF 5 |
| APPROVED   |                                                                                                                                                                                                | TITLE                                                                                                                                                                                                                                                                                         | SCALE        |
| DE APPR.   |                                                                                                                                                                                                | TOW RING                                                                                                                                                                                                                                                                                      | NTS          |
| DATE       | 08.07.23                                                                                                                                                                                       | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.<br>THIS DOCUMENT IS PRELIMINARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC. |              |



**D3407-1 STEM**

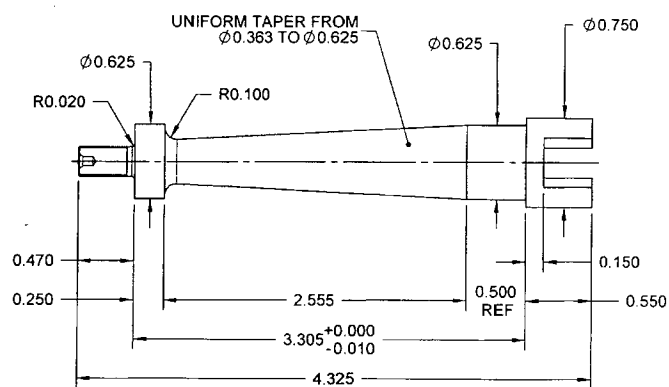
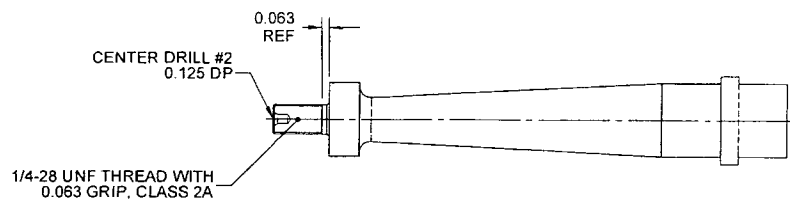
**NOTES:**

- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.33 lbs

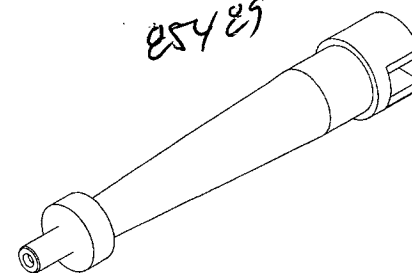
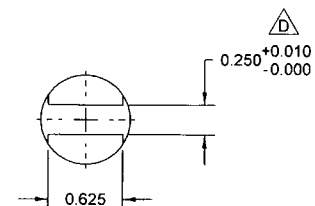
**RELEASED**

|            |          |                                                                                                                                                                                                                                                                                                             |              |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     |          | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                                             |              |
| DRAWN      |          | PORT HADLOCK, WA                                                                                                                                                                                                                                                                                            |              |
| CHECKED    |          | DRAWING NO.                                                                                                                                                                                                                                                                                                 | REV. E       |
| MFG. APPR. |          | <b>D3407</b>                                                                                                                                                                                                                                                                                                | SHEET 2 OF 5 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                                                       | SCALE        |
| DE APPR.   |          | <b>TOW RING</b>                                                                                                                                                                                                                                                                                             | NTS          |
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**D3407-3 STEM**

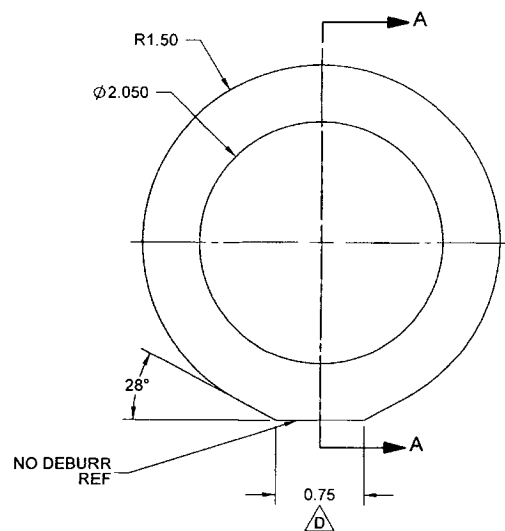


- NOTES:
- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
  - 6) IDENTIFICATION: N/A
  - 7) WEIGHT: 0.27 lbs

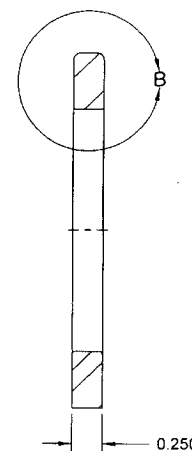
**RELEASED**  
08-08-01 R/P

|            |          |                                                                                                                                                                                                                                                                                           |              |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     |          | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                           |              |
| DRAWN      |          | PORT HADLOCK, WA                                                                                                                                                                                                                                                                          |              |
| CHECKED    |          | DRAWING NO.                                                                                                                                                                                                                                                                               | REV. E       |
| MFG. APPR. |          | D3407                                                                                                                                                                                                                                                                                     | SHEET 3 OF 5 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                                     | SCALE        |
| DE APPR.   |          | TOW RING                                                                                                                                                                                                                                                                                  | NTS          |
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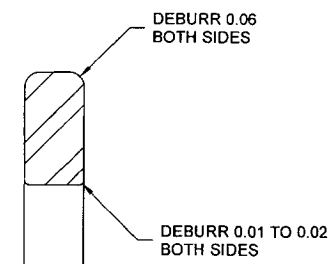
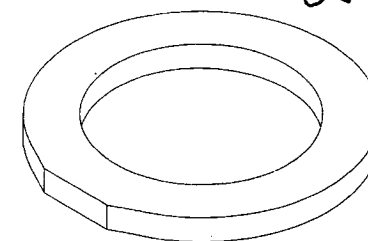
25489



**D3407-5 RING**



**SECTION A-A**

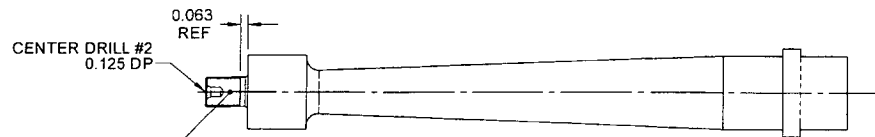


**DETAIL B  
SCALE 2X**

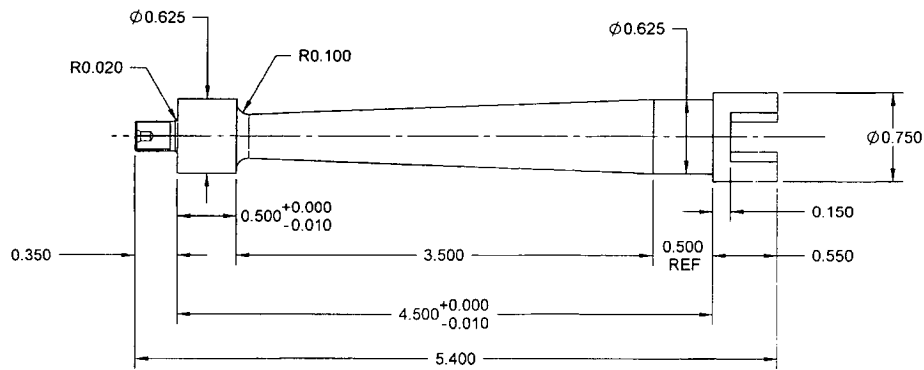
**RELEASED**  
08-08-2023

- NOTES:**
- 1) MATERIAL: 17-4 PH SS BAR PER AMS 5604/5643 (REF. DART SPEC M17-4-B)
  - 2) FINISH: NONE
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: N/A
  - 6) IDENTIFICATION: N/A
  - 7) WEIGHT: 0.27 lbs

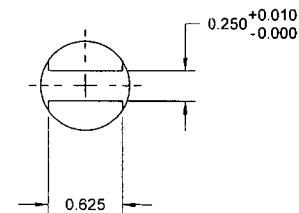
|            |          |                                                                                                                                                                                                                                                                                           |              |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | 90       | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                           |              |
| DRAWN      | 1/18     | PORT HADLOCK, WA                                                                                                                                                                                                                                                                          |              |
| CHECKED    |          | DRAWING NO.                                                                                                                                                                                                                                                                               | REV. E       |
| MFG. APPR. |          | D3407                                                                                                                                                                                                                                                                                     | SHEET 4 OF 5 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                                     | SCALE        |
| DE APPR.   |          | TOW RING                                                                                                                                                                                                                                                                                  | NTS          |
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1/4-28 UNF THREAD WITH  
0.063 GRIP, CLASS 2A



**D3407-7 STEM**



**RELEASED**

**NOTES:**

- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.34 lbs

|            |          |                                                                                                                                                                                                                                                                                                             |        |
|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| DESIGN     | AJS      | <b>DART AEROSPACE USA, INC.</b>                                                                                                                                                                                                                                                                             |        |
| DRAWN      |          | PORT HADLOCK, WA                                                                                                                                                                                                                                                                                            |        |
| CHECKED    |          | DRAWING NO.<br><b>D3407</b>                                                                                                                                                                                                                                                                                 | REV. E |
| MFG. APPR. |          | SHEET 5 OF 5                                                                                                                                                                                                                                                                                                |        |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                                                       | SCALE  |
| DE APPR.   |          | <b>TOW RING</b>                                                                                                                                                                                                                                                                                             | NTS    |
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